

A1  
encl  
a dielectric multilayer film that conforms to the diffraction grating, wherein the layers included in said dielectric multilayer film are arranged such that only the same kind of layers are continuous across the level difference of the diffraction grating.

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A2  
12. (Amended) The diffractive optical element as claimed in claim 7, wherein said dielectric multilayer film has a number,  $j$ , of kinds of layers in one period, where  $n_0$  is a refractive index of the substrate,  $n_1, \dots, n_j$  are refractive indices of the different kinds of layers of the dielectric multilayer film, and  $m$  is an integer not less than 1, and the following equation is satisfied:

$$2/n_0 = m (1/n_1 + \dots + 1/n_j).$$


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A3  
14. (Amended) The diffractive optical element as claimed in claim 7, wherein said dielectric multilayer film has a number,  $j$ , of kinds of layers in one period, where  $n_1, \dots, n_j$  are refractive indices of the different kinds of layers of the dielectric multilayer film, and  $m$  is an integer not less than 1, and the following equation is satisfied:

$$2 = m (1/n_1 + \dots + 1/n_j).$$


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A4  
20. (Amended) A method of manufacturing a diffractive optical element, comprising:

a first step of forming on a surface of a substrate a diffraction grating having a level difference substantially perpendicular to a surface of the substrate; and

Al end  
a second step of forming a dielectric multilayer film that conforms to the diffraction grating on the surface of the substrate so that only the same kind of dielectric layers included in the dielectric multilayer film are continuous across the level difference of the diffraction grating.

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23. (Amended) The method of claim 20, wherein said dielectric multilayer film comprises j kinds of layers, where j is an integer greater than one, and further including the step of selecting materials for each of said layers which satisfy the following condition:

AS  
$$2/n_0 = m (1/n_1 + \dots + 1/n_j)$$

where  $n_0$  is the refractive index of the substrate,

$n_i$  is the refractive index of a layer i of said film,  $i = 1, \dots, j$ , and

m is an integer greater than zero.

24. (Amended) A diffractive optical element, comprising:

a substrate having a diffraction grating formed by periodic depressions and projections on a surface thereof; and

a dielectric film that conforms to said diffraction grating, said film comprising multiple layers of different kinds of dielectric material wherein at least some of said individual layers are continuous across plural successive depressions and projections of said diffraction grating.

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28. (Amended) The diffractive optical element of claim 24, wherein said dielectric film comprises  $j$  different kinds of layers, where  $j$  is an integer greater than one, and the respective materials of said different kinds of layers satisfy the following condition:

$$2/n_0 = m (1/n_1 + \dots + 1/n_j)$$

where  $n_0$  is the refractive index of the substrate,

$n_i$  is the refractive index of a layer  $i$  of said film,  $i=1, \dots, j$ , and

$m$  is an integer greater than zero.

29. (Amended) The diffractive optical element of claim 28, where  $j = 2$ .

31. (Amended) The diffractive optical element of claim 30, wherein said dielectric film comprises  $j$  different kinds of layers, where  $j$  is an integer greater than one, and the respective materials of said different kinds of layers satisfy the following condition:

$$2/n_0 = m (1/n_1 + \dots + 1/n_j)$$

where  $n_0$  is the refractive index of the substrate,

$n_i$  is the refractive index of a layer  $i$  of said film,  $i=1, \dots, j$ , and

$m$  is an integer greater than zero.